11. (New) An output packet organizer, comprising:

a) a first location that stores a high priority packet identifier, said high priority packet identifier indicating where a high priority packet, that is waiting to be sent from a packet buffer to a networking line, is located within said packet buffer;

b) n time slot locations wherein n is an integer, wherein each of said n time slot locations stores its own low priority packet identifier such that one of n low priority packet identifiers can be stored per said time slot location, each of said n low priority packet identifiers indicating where a corresponding low priority packet is located within said packet buffer such than n low priority packets waiting to be sent from said packet buffer to said networking line are indicated, said high priority packet having a higher priority than said n low priority packets; and

c) a scheduler that services said locations according to a plurality of scheduling cycles, wherein said first location and one of said n time slot locations can be serviced for each of said scheduling cycles, such that, n of said scheduling cycles results in said first location being serviced n times and said n time slot locations each being serviced one time, said servicing of a said location causing removal of a said packet identifier stored therein, said removal of a said packet identifier stored therein causing sending of a packet identified by said packet identifier from said packet buffer to said networking line, wherein each of said scheduling cycles corresponds to an output rate defined by an amount of packet data sent from said packet buffer per unit of time.

12. (New) The output packet organizer of claim 11 wherein said scheduler services said n time slot locations in a round robin fashion.

13. (New) The output packet organizer of claim 11 wherein said high priority packet is a packet that carries real time traffic.

14. (New) The output packet organizer of claim 13 wherein said real time traffic further comprises voice traffic.

15. (New) The output packet organizer of claim 11 wherein at least of said n low priority packets is a packet that carries data traffic.

16. (New) The output packet organizer of claim 15 wherein said data traffic further comprises an e-mail message.

17. (New) The output packet organizer of claim 11 further comprising a second location that stores a higher priority packet identifier, said higher priority packet identifier indicating where a higher priority packet, that is waiting to be sent from said packet buffer to said networking line, is located within said packet buffer, said higher priority packet having a higher priority than said high priority packet, and said second location can be serviced by said scheduler for each of said scheduling cycles.

18. (New) The output packet organizer of claim 17 wherein said higher priority packet carries network maintenance traffic.

19. (New) The output packet organizer of claim 11 wherein said scheduler services a said location only if said location is storing a said packet identifier.

20. (New) The output packet organizer of claim 19 further comprising a second location that stores a lower priority packet identifier, said lower priority packet identifier indicating where a lower priority packet, that is waiting to be sent from said packet buffer to said networking line, is located within said packet buffer, said lower priority packet having a lower priority than said n low priority packets, and said second location can be serviced by said scheduler only if a said location other than said second location is empty when said scheduler looks to service said other location.

21. (New) The output packet organizer of claim 11 wherein said scheduler can be configured to service high priority packet identifiers from said first location, per said scheduling cycle, such that a first percentage of said amount of packet data can be removed from said packet buffer, in the form of high priority packets, per said scheduling cycle.

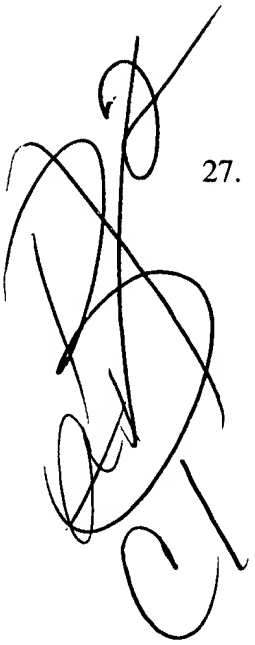
22. (New) The output packet organizer of claim 21 wherein said scheduler can be configured to service low priority packet identifiers from one of said n time slot locations, per said scheduling cycle, such that a second percentage of said amount of packet data can be removed from said packet buffer, in the form of low priority packets, per said scheduling cycle.

23. (New) The output packet organizer of claim 22 wherein said scheduler, during said scheduling cycle, services high priority packet identifiers from said first location, to the extent they represent an amount of high priority packet data greater than said first percentage, at the expense of low priority packet identifiers stored within the time slot location scheduled to be serviced for said scheduling cycle.

24. (New) The output packet organizer of claim 23 wherein a next time slot location accepts said low priority packet identifiers that were left un-serviced as a result of said servicing of said high priority packet identifiers that represented high priority packet data beyond said first percentage, said next time slot location serviced by said scheduler during a next scheduling cycle that follows said scheduling cycle.

25. (New) The output packet organizer of claim 11 wherein a weighted fair queue is built into said n elastic time slots by establishing a first quantitative flow having a higher output rate than a second quantitative flow, such that, low priority packets assigned to said first quantitative flow endure less waiting time within said packet buffer than low priority packets assigned to said second quantitative flow.

26. (New) The output packet organizer of claim 11 wherein a first plurality of different users are assigned to said first quantitative flow and a second plurality of different users are assigned to said second quantitative flow.



27. (New) A method, comprising:

servicing a first location and n time slot locations according to a plurality of scheduling cycles, wherein said first location and one of said n time slot locations are serviced for each of said scheduling cycles, such that, n of said scheduling cycles results in said first location being serviced n times and said n time slot locations each being serviced one time, said servicing of a said location causing removal of a packet identifier stored therein, said removal of a packet identifier stored therein causing sending of a packet identified by said packet identifier from a packet buffer to a networking line, wherein each of said scheduling cycles corresponds to an output rate defined by an amount of packet data sent from said packet buffer per unit of time, said first location used to store high priority packet identifiers, said n time slot locations used to store low priority packet identifiers, such that high priority packets identified by said high priority packet identifiers have a higher priority than low priority packets identified by said low priority packet identifiers.

28. (New) The method of claim 27 wherein said n time slot locations are serviced in a round robin fashion.

29. (New) The method of claim 27 wherein at least one of said high priority packet identifiers identifies where a packet that carries real time traffic is found within said buffer memory.

30. (New) The method of claim 29 wherein said real time traffic further comprises voice traffic.

31. (New) The method of claim 27 wherein at least of said low priority packet identifiers identifies where a packet that carries data traffic is found within said buffer memory.

32. (New) The method of claim 31 wherein said data traffic further comprises an e-mail message.

33. (New) The method of claim 27 further comprising servicing a second location according to said plurality of scheduling cycles, said second location used to store a higher priority packet identifier, said higher priority packet identifier indicating where a higher priority packet, that is waiting to be sent from said packet buffer to a networking line, is located within said packet buffer, said higher priority packet having a higher priority than said high priority packets.

34. (New) The method of claim 33 wherein said higher priority packet carries network maintenance traffic.

35. (New) The method of claim 27 wherein said locations are serviced only if a said location is storing a said packet identifier.

36. (New) The method of claim 27 further comprising servicing a second location according to said plurality of scheduling cycles, said second location used to store a lower priority packet identifier, said lower priority packet identifier indicating where a lower priority packet, that is waiting to be sent from said packet buffer to a networking line, is located within said packet buffer, said lower priority packet having a lower priority than said low priority packets, and said second location is said serviced only if a said location other than said second location is empty when its turn to be serviced arises during a said scheduling cycle.

37. (New) The method of claim 27 wherein said high priority packet identifiers are serviced from said first location, per said scheduling cycle, such that a first

percentage of said amount of packet data is removed from said packet buffer, in the form of high priority packets, per said scheduling cycle.

38. (New) The method of claim 37 wherein said low priority packet identifiers are serviced from one of said n time slot locations, per said scheduling cycle, such that a second percentage of said amount of packet data is removed from said packet buffer, in the form of low priority packets, per said scheduling cycle.

39. (New) The method of claim 38 wherein high priority packet identifiers are serviced from said first location, to the extent they represent an amount of high priority packet data greater than said first percentage, at the expense of low priority packet identifiers stored within the time slot location scheduled to be serviced for said scheduling cycle.

40. (New) The method of claim 39 wherein a next time slot location accepts said low priority packet identifiers that were left un-serviced as a result of said servicing of said high priority packet identifiers that represented high priority packet data beyond said first percentage, said next time slot location serviced during a next scheduling cycle that follows said scheduling cycle.

41. (New) The method of claim 27 wherein a weighted fair queue is built into said n elastic time slots by establishing a first quantitative flow having a higher output rate than a second quantitative flow, such that, low priority packets assigned to said first quantitative flow endure less waiting time within said packet buffer than low priority packets assigned to said second quantitative flow.

42. (New) The output packet organizer of claim 41 wherein a first plurality of different users are assigned to said first quantitative flow and a second plurality of different users are assigned to said second quantitative flow.